

Calendar

October

- 7 Lansing, Michigan History Museum 6-10p.m. Michigan Aviation Hall of Fame 14th Annual Enshrinement. Four Michigan aviation pioneers to be inducted. For information, call 517-886-1030.
- 7-8 Kalamazoo, Kalamazoo Aviation History Museum, (Air Zoo) Fall Open House-**FREE** admission to the museum and flight center. Sponsored by Kalamazoo Aviation History Museum. Call 616-382-6555.

November

- 9 Lansing Capital City Airport, Bureau of Aeronautics Auditorium, 10a.m. Michigan Aeronautics Commission Meeting. Call 517-335-9943.

John Engler, Governor

MICHIGAN AERONAUTICS COMMISSION

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THE MICHIGAN AIR TOUR 2000 IS COMING September 29, - October 2, 2000

The purpose of this year's Air Tour is to publicize the Michigan airport network and to demonstrate the economic importance of airports. It's lots of fun, too.



The Michigan Air Tour (MAT) is open to all pilots. Participants will meet at Berz-Macomb Airport on Friday morning, September 29, at 8:00 a.m. for registration, and coffee and donuts. The Tour will continue with a stop at Oakland/Southwest (formerly New Hudson), and lunch at Mount Pleasant. Then, on to Boyne Mountain, where a "Wings" Safety Seminar is scheduled. The tour participants will overnight at Boyne Mountain Resort. Saturday morning all participants will depart for Pellston, then on to Menominee-Marinette for lunch, and a tour of the Enstrom Helicopter Co. manufacturing facilities. On Saturday afternoon, the MAT will return to the Boyne Mountain airport. Activities that evening will include the Annual Banquet and meeting of the Michigan Aviation Association. The participants will again spend the night at the Boyne Mountain Resort. On Sunday, the group will depart for the Kalamazoo International Airport, the final stop on the tour. Lunch will be served at the Kalamazoo Air Zoo. After lunch, tour participants will be able to tour the Air Zoo, one of the finest Aviation Museums in the region.

For more information regarding the Michigan Air Tour, contact this year's Tour Directors: Bob Shafer, (734) 692-3434, rshafer@ibm.net or Steve Weaver, (734) 761-1664, TankerLead@aol.com.

**MICHIGAN
Aviation**



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MICHIGAN Aviation

GETTING DOWN

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COMMISSION ACTION



Aviation Information

Continued from page 6

The Michigan Aeronautics Commission met on July 20, 2000 in St. Ignace. Among the issues acted upon was the approval of funding totaling, \$23.1 million, for airport improvements across the state. Some projects have federal, state, and local funding, while others are funded from state and/or local sources alone. Commission approval for federally funded projects authorizes state participation, subject to issuance of a federal grant. Federal and state dollars for airport development are primarily from restricted, user generated funds. The primary sources of revenue are aviation fuel and passenger taxes, as well as aircraft registration fees.

The following are approved projects:

BARAGA

Baraga Airport - an allocation of \$40,000 for preparation of an airport layout plan for a new airport. The proposed budget consists of \$36,000 state and \$4,000 local funds.

BENTON HARBOR

Southwest Michigan Regional Airport - an allocation of \$20,000 for a wildlife assessment. The proposed budget consists of \$18,000 federal, \$1,000 state, and \$1,000 local funds.

FLINT

Bishop International Airport - an allocation of \$1,800,000 to relocate the VOR and for design work to rehabilitate Runway 9/27. The proposed budget consists of \$1,620,000 federal, \$90,000 state, and \$90,000 local funds.

FREMONT

Fremont Municipal Airport - an allocation of \$70,000 for an environmental assessment for a

project to extend Runway 18/36. The proposed budget consists of \$63,000 state and \$7,000 local funds.

GRAND HAVEN

Grand Haven Memorial Airport - an allocation of \$12,000 for runway threshold relocation. The proposed budget consists of \$6,000 state and \$6,000 local funds.

GRAND RAPIDS

Gerald R. Ford International Airport - an allocation of \$1,955,556 for a noise mitigation program and for design work for Runway 8R/26L rehabilitation. The proposed budget consists of \$1,760,000 federal, \$70,000 state, and \$125,556 local funds.

HANCOCK

Houghton County Memorial Airport - an allocation of \$6,800,000 to rehabilitate Runway 13/31 and to construct a new Taxiway C. The proposed budget consists of \$6,120,000 federal, \$334,000 state, and \$346,000 local funds.

HOWELL

Livingston County Airport - an allocation of \$490,000 for site preparation for future T-hangar construction. The proposed budget consists of \$441,000 state and \$49,000 local funds.

LANSING

Capital City Airport - an allocation of \$1,934,400 to rehabilitate the terminal apron, design work for a terminal building addition, and to relocate the rental car lot. The proposed budget consists of \$1,741,000 federal, \$96,700 state, and \$96,700 local funds.

MACKINAC ISLAND

Mackinac Island Airport - an allocation of \$5,400 for terminal building improvements. The proposed budget consists entirely of state funds.

MUSKEGON

Muskegon County Airport - an allocation of \$1,133,000 for obstacle removal, construction of a snow removal equipment storage building, and for land acquisition. The proposed budget consists of \$1,019,700 federal and \$113,300 local funds.

PONTIAC

Oakland County International Airport - an allocation of \$3,405,000 to acquire land for noise mitigation, and to install lighting and reflectors on Taxiways A and G. The proposed budget consists of \$3,000,000 federal, \$63,900 state, and \$341,100 local funds.

SAGINAW

MBS International Airport - an allocation of \$4,000,000 to rehabilitate Runway 5/23. The proposed budget consists of \$3,600,000 federal, \$200,000 state, and \$200,000 local funds.

SANDUSKY

Sandusky City Airport - an allocation of \$200,000 for land acquisition to ensure obstruction clearance. The proposed budget consists of \$180,000 state and \$20,000 local funds.

TRAVERSE CITY

Cherry Capital Airport - an allocation of \$1,230,000 to acquire aircraft rescue and fire fighting equipment and for preliminary design work on terminal building renovations. The proposed budget consists of \$1,107,000 federal, \$61,500 state, and \$61,000 local funds.

8. Improve pilot evaluation and testing. Examiners will be required to evaluate pilot proficiency in airport surface operations. On written tests, there will be more questions on airport signs, lighting, and markings.

9. Develop air traffic teamwork enhancement training for tower controllers. The purpose is to reduce operational errors by fostering increased teamwork. Initially, controllers at the ten facilities with the highest rate of operational errors will be trained.

10. Identify new and emerging technologies. The FAA intends to issue a nationwide announcement soliciting new technologies. It will include criteria to be used in evaluation and funding.

The New Hudson Airport has recently been purchased by Oakland County and will be renamed Oakland/Southwest Airport. The purchase was the culmination of efforts by the Bureau of Aeronautics, Oakland County, and former airport owner, Liz Meyer. One of the Bureau's highest priorities has been the preservation of airports, especially in southeastern Michigan. Oakland County already owns and operates the only two other airports in the county. In addition to Oakland County International near Pontiac, the county also owns Oakland/Troy Airport. If New Hudson had closed, 140 aircraft would have been displaced. State and federal funds were used to issue a grant to Oakland County for purchase of the airport. Ms. Meyer will continue to operate the airport and the FBO for the next five years.

The National Association of State Aviation Officials (NASAO) presented its National Award of Excellence to FAA Administrator Jane Garvey during her "Meet the Boss" session at EAA AirVenture 2000 in Oshkosh, Wisconsin. Established in 1997, the award is the highest honor NASAO can bestow upon a person who has demonstrated leadership and initiative while providing outstanding contributions that have significantly enhanced the world of aviation. Previous recipients of the award include Paul Poberezny, Congressman James Oberstar (D-Minnesota), and House Transportation Chairman Bud Shuster (R-Pennsylvania). NASAO Chairman Ken Wiegand, Virginia Department of Aviation Director, said, "As an outspoken advocate of aviation, your ability to marshal the resources of state governments, the aviation industry and academia to address the national aviation agenda has been of great benefit to all Americans." Wiegand also noted Administrator Garvey's strong commitment to the FAA/NASAO Memorandum of Understanding, which permits the organizations to work closely together to solve problems such as runway incursions. Michigan Aeronautics Commission Director, William Gehman is the immediate past Chairman of NASAO.

The Gerald R. Ford Airport in Grand Rapids will be home to a new aviation history museum. Groundbreaking is expected to begin next spring for the 60,000 square foot *Michigan Military Air Land and Sea Museum*. It will be operated by the nonprofit Michigan Military Preservation Society, whose goal is to restore and preserve military aircraft and land vehicles. Plans include a theater, hangar, and 1,500-book library.

The museum will also house an aviation maintenance technician program run by the Kent Career/Technical Center. Before the museum can become a reality, however, project organizers must raise \$3.5 million by April 2002, toward an ultimate goal of \$12 million.

2001 GREAT LAKES INTERNATIONAL AVIATION CONFERENCE

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**REGISTRATION MATERIALS
WILL BE AVAILABLE IN THE
OCTOBER ISSUE
PLAN NOW TO ATTEND**



Aviation In-formation

The Michigan Aviation Hall of Fame has announced the names of four individuals who will be enshrined at an October 7, 2000 ceremony in Lansing.

Edgar Allen "Pete" Goff, Jr. served in World War I, established Battle Creek Air Service, Aviation Motors Corp., Duplex Air Service in 1928, and helped establish Kellogg Field in Battle Creek. Goff was a senior aeronautic inspector for the U.S. Department of Commerce before entering World War II as an Army Air Corps captain. During the war, he served in every theater of operations and wrote *The Pilot's Handbook*, which became a worldwide standard. He commanded the Flight Service Center at Wright-Patterson Air Force Base from 1953 until his retirement from active duty in 1957. A member of many aviation organizations, he was president of the OX-5 Club of America four times. He was born in Battle Creek and died in Annapolis, Maryland.

Lt. Col. James T. Greshel was Born in Cleveland, Ohio, in 1934. During a distinguished 28-year Air Force career he flew several different types of aircraft including the B-47, B-57, T-33, WC-130, T-39, C-5, and F-100. During the Vietnam War, he served in Danang, Phan Rang and on Taiwan. Later, while serving with the Air Force Hurricane Hunters, he logged over 80 penetrations of named tropical storms. Among his 13 decorations are the Distinguished Flying Cross, the Air Medal with 12 oak leaf clusters, and the Vietnamese Cross of Gallantry with a silver star. After retiring from the military, Greshel was administrator of safety and services for the Michigan Bureau of Aeronautics. He re-

tired from that post in 1999. He was instrumental in the founding and is active in the day-to-day operation of the Michigan Aviation Hall of Fame.

Henry A. Haigh II, a Michigan native, has participated in more world aerobatic championships than anyone else on the planet. He is tied with Kermit Weeks of Florida for winning the most medals (17) in world competition. He was the world champion acrobatic pilot in 1988 and has earned a total of 5 gold, 7 silver, and 5 bronze medals in team and individual world championship competition. Haigh has won more than 60 regional titles and won the International Aerobatic Club Championship six times. He was the U.S. national champion in 1980 and placed second nine times. Haigh was inducted into the International Aerobatic Club Hall of Fame in October of 1999.

Albert Grant Kettles was designated by the Royal Canadian Air Force as an "Ace" pursuit pilot. His combat record in WWI included the downing of an observation balloon. In 1919, he gave flight instruction in the Windsor-Detroit area, then became Lansing station manager for Thompson Airways, flew as a charter pilot for AKF Airways, and ferried aircraft for Travelair. He was the first full-time pilot hired by the State of Michigan. He left that position the day after the bombing of Pearl Harbor to enlist in the US Army Air Corps, where he flew every type of military aircraft. After WWII, he became chief pilot for Ford Motor Company, then joined Abrams Aerial Survey where he was chief pilot for twenty years until his retirement.

The Federal Aviation Administration has announced ten near-term measures to reduce runway incursions. In the past several years, the number of incursions has risen at a rate faster than that of air traffic. John Mayrhofer, director of runway safety programs for the FAA, said that remedial action will emphasize initial and recurrent train-

ing since, "every runway incursion is a human error." The "Top 10 List" was culled from several hundred recommendations received from government and industry. According to Mayrhofer each of the following actions was chosen because of its probability of rapid implementation.

1. Enhance tower controller training. The focus will be on "anticipated separation" of aircraft at intersecting runways.

2. Develop a training plan for foreign air carrier pilots. This will be done through an industry-government partnership.

3. Issue an Advisory Circular for airport surface operations. It will identify "best practices" for single and dual-seat cockpits. Also verbal and non-verbal communications, both within the cockpit and with air traffic control, will be addressed.

4. Improve airport markings. The immediate goal is to increase the visibility of "hold short" lines. This will involve changing the size and background color for painted yellow hold lines for better visibility from the cockpit.

5. Improve education, training, and awareness for pilots, controllers and vehicle operators. This will involve identification of existing resource materials and programs. A resource library, which could be shared across the industry will be created.

6. Provide training in memory enhancement techniques for tower controllers. The goal is to reduce operational errors by developing a training curriculum to improve short-term memory and improve situational awareness.

7. Implement a review of phraseology in pilot/controller communication. Elimination of needless phraseology would help reduce radio congestion. By year-end a review of the pilot-controller communications handbook is to be completed.

Accident+ Reports

Accident Reports are reprinted from Federal Aviation Administration (FAA), National Transportation Safety Board (NTSB), or Police reports and are for information only. *Michigan Aviation* does not attest to the accuracy of these reports. We do not determine the cause of accidents; that is left to NTSB and FAA investigators.

JUNE

10 Flushing, Dalton Airport, Piper PA-28R, pleasure flight, injuries: 2 Serious; aircraft damage: destroyed, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft struck the ground following an in-flight collision with trees while on initial climb from runway 36 (2,510 feet by 50 feet, dry/asphalt).

10 Grand Rapids, Truthan Searey, pleasure flight, injuries: None; aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft flipped over during taxi on the Thornapple River, near Grand Rapids.

26 Canton, Mettetal Airport, Cessna 172N, Instructional flight, injuries: None; aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft nosed over during an attempted landing and go-around on runway 18 (2,556' x 75').

JULY

4 Gregory, Schleicher ASW-20L glider, pleasure flight, injuries: Minor; aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Pilot reported, while flying the aero-tow he noticed that pitch control was diminished and the elevator control inputs were unresponsive. Pilot reported he stayed on the aero-tow but was unable to remain clear of the tow-plane's propeller wash, and subsequently decided to release from the tow-plane, at approximately 1,000 feet above ground level (agl), on a downwind departure. Witnesses to

the accident stated the aircraft approached the airport at a high decent rate without any extended high-drag devices. Witnesses described the landing as hard, and the aircraft then bounced back into the air approximately 50 feet agl, followed by a full-stop landing.

5 Athens, David's Airport, Cessna C-172R, instructional flight, injuries: None, aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Pilot aborted landing on runway 9 (2,500 feet by 100 feet, dry turf) and lost control and then collided with a runway edge identifier light.

16 Gwinn, Mead Kolb Firestar II, personal flight, injuries: 1 Fatal, aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft piloted by an uncertificated pilot sustained substantial damage on impact with terrain following a takeoff from a private airstrip near Gwinn.

26 Gladstone, Comeau Avid Flyer, pleasure flight, injuries: Minor; aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft was destroyed on impact with water during takeoff from Little Bay Du Noc, Gladstone. During takeoff, the aircraft's wing contacted the water and the airplane flipped over.

27 Harbor Springs Municipal Airport, Piper PA-34-200T, instructional flight, injuries: None; aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft was damaged during an intentional ground loop while landing on runway 28 (4,157' x 75', wet asphalt).

AUGUST

14 Bad Axe, Ayers S2R-600, agricultural flight, injuries: Fatal; aircraft damage: destroyed, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft was destroyed on impact while maneuvering near Bad Axe.

14 Ironwood, North American NA-265-80, business flight, injuries: Fatal; aircraft damage: destroyed, Wx: Visual meteorological conditions with thunderstorms, Accident Report: Aircraft crashed in a densely wooded area about 3.5 nautical miles northeast of the Gogebic Iron-County Airport (IWD), Ironwood. The flight departed Brainerd-Crow Wing County Regional Airport (BRD) en route to Flint/Bishop International Airport (FNT), on an IFR flight plan. The airplane's altitude was approximately 31,800 feet mean sea level (msl) and about 7 nm north of Ashland, Wisconsin, when the pilot declared a "MAYDAY" distress call. Pilot reported the airplane had lost power from both engines, and the airplane had been struck by lightning. The airplane was vectored toward IWD. At approximately 17,500 feet msl and 12 nm west of IWD, the pilot reported the airplane lost its navigation capability. The IWD AWOS observation at 1815 indicated the following weather: Wind from 320 degrees at 6 knots, visibility 9 miles in thunderstorms, sky clear below 12,000 feet, temperature 23 degrees C, dew point 17 degrees C, altimeter 29.93 inches of Hg.

15 Holland, Tulip City Airport, Beech BE-35K, pleasure flight, injuries: None; aircraft damage: substantial, Wx: Visual meteorological conditions prevailed, Accident Report: Aircraft was substantially damaged during a precautionary landing on runway 26 with the aircraft coming to rest about 100 yards short of the runway. The pilot reported (while in flight) he found the throttle control would only operate between 3/4 throttle and full throttle. A post accident examination of the aircraft revealed the bolt that attaches the clamp to the throttle cable housing was loose.

GETTING DOWN -

TRAFFIC PATTERN ENTRIES AT NON-TOWERED AIRPORTS

by Tom Krashen, Michigan Bureau of Aeronautics

A basic and immutable law of physics states that “no two objects can occupy the same space at the same time.” Occasionally, and with universally tragic results, pilots try to disprove this law. As with motherhood and apple pie, no sane pilot is opposed to collision avoidance in the traffic pattern. Nevertheless, many pilots are surprisingly cavalier about their traffic pattern techniques. If you want to start a spirited argument among almost any group of pilots, there are fewer subjects guaranteed to get results than that of how to fly the pattern at non-towered airports.

Most non-pilots would be shocked to learn that the accepted method of preventing collisions in visual conditions is to “see-and-avoid.” At the risk of being obvious, this involves two simple steps. First, find the other aircraft, and second, don’t hit it. It is the first part of this equation that the traffic pattern is designed to facilitate.

Operating in the traffic pattern can be compared to driving a car in a crowded shopping mall parking lot on a Saturday afternoon. If you want to prevent a collision, there is no substitute for driving slowly, looking around constantly, and giving the other driver the benefit of the doubt. When operating a car, this is called “defensive driving.” These “defensive” principals also apply to safe flying.

“THE STANDARD PATTERN”

Regulations governing arriving airplanes approaching to land at non-towered airports are simple, short, and very clear. Part 91.126 of the Federal Aviation Regulations (FARs) says that “each pilot of an airplane must make all turns of that airplane to the left unless the airport displays approved light signals or visual markings indicating that turns should be made to the right, in which case the pilot must make all turns to the right.” Perhaps the most significant

thing about this rule is what it does not say. It does not prohibit a straight-in approach, it does not specify a pattern altitude, and it does not mandate where or how the traffic pattern is to be entered.

However, the Aeronautical Information Manual (AIM), Advisory Circular AC-90-66A, and numerous other publications do address the specifics of pattern entry, altitude, communication, and departure. While not regulatory, these “recommendations” should be heeded. After all, the point is to avoid collisions, not to engage in an argument about strict legalities.

ENTERING THE PATTERN

As mentioned above, the topic of pattern entry is a guaranteed source of controversy and vigorous discussion among pilots. Our intent here is not to add to that controversy, but rather, to encourage techniques which are safe, practical, and efficient.

The standard traffic pattern entry specifies that pilots should enter on a 45 degree angle to a left downwind leg (unless right traffic is indicated) at the designated traffic pattern altitude. The airspeed should be reduced to approach speed with approach flaps and landing gear (if appropriate) extended. This arrangement affords the best view of other traffic already in the pattern and allows the pilot to easily adjust speed and flight path to follow other aircraft. It is also a chance to check the wind sock and runway condition. Base leg is normally turned when reaching a 45 degree angle to the approach end of the runway. When following other traffic, turn base leg when abeam the preceding airplane. The recommend pattern altitude for small airplanes is 1,000 feet above ground level (AGL). Some airports may specify a higher or lower altitude for operational or noise abatement reasons. Check the Airport Fac-

ility Directory or Michigan Airport Directory for non-standard patterns and altitudes.

How about when approaching the airport from the upwind side? There are two accepted and safe techniques for making an upwind entry (even though many pilots are adamant that their preference is correct). The first method (see Figure 1) is to overfly the airport at 1,000 feet above pattern altitude until well beyond the pattern (at least two miles) and descend prior to entering the downwind leg as indicated previously. Since large and turbine-powered airplanes typically fly the traffic pattern at 1,500 feet, this will insure separation from all aircraft. Two common errors, however, can make this procedure very dangerous. First, pilots must make sure they are well clear of the traffic pattern before turning back for the entry. Otherwise they could find themselves conflicting with other aircraft already in the pattern. The second error is not descending to pattern altitude and slowing to approach speed prior to beginning the 45 degree entry leg.

The second upwind entry method (see Figure 2) is to fly a mid-field crosswind leg from directly over the active runway. Enter the crosswind leg at pattern altitude and slowed to approach speed (below flap and or gear extension speed is a good guideline). As with the downwind entry method,

this technique allows pilots to see other aircraft and maneuver as necessary.

Above all, never descend into the pattern! This is a classic recipe for a mid-air collision, especially when a low wing airplane is descending above a high wing airplane.

How about entering the pattern on a base leg or simply fly straight-in? There is nothing in the regulations that prohibits this. However, these types of pattern entries make seeing other aircraft in the pattern more difficult, and increase the chances of cutting off other airplanes that are flying a full pattern. A better technique when approaching straight-in is to make a slight side-step and enter the upwind leg at pattern altitude. In addition to smoothly merging with other traffic, this is an excellent way to check wind and runway conditions prior to landing.

INSTRUMENT APPROACHES

Pilots landing at non-towered airports after completing an instrument approach are expected to follow the same traffic pattern procedures as pilots of VFR aircraft. However, since most approach procedures are aligned with the runway, the temptation to simply continue straight-in for landing is strong. Indeed, this may sometimes be the safest option. When the ceiling and visibility are at or near approach minimums, a pilot may reasonably elect to continue the approach to a landing rather than maneuver during marginal weather. In any case, extreme caution must be exercised since controlled airspace (Class E) ends at 700 feet above the ground at non-towered airports served by non-precision approaches. Below this altitude, pilots are operating in uncontrolled (Class G) airspace. Daytime weather minimums in Class G airspace require only that aircraft be operated clear of clouds and that one mile visibility prevails. Amazingly, this may be lower than the instrument approach minimums for the same airport! Fortunately, most VFR (visual flight rules) pilots have a strong self-preservation instinct and voluntarily adhere to much higher minimums. During marginal conditions, the ability to “see-and-avoid” is severely compromised. VFR pilots must use dis-

cretion when flying with low ceilings and reduced visibility.

COMMUNICATION

Next to looking outside, the single most important thing pilots can do to prevent collisions in the traffic pattern is to communicate. By definition, communication is a two-way process: speaking and listening. As long as we’re making bold statements, here’s another. Communication at non-towered airports is not required, but it should be. Of the five senses human beings possess, only sight and hearing are of any use in preventing mid-air collisions. Without a radio, you are depriving yourself of one of these. Pilots of non-radio equipped aircraft (including ultralights) can substantially enhance safety by obtaining and using a hand-held transceiver.

Make your initial call on the designated Common Traffic Advisory Frequency (CTAF) about ten miles from the airport. In addition to stating your position and intentions, begin and end each transmission with the airport name: “Mackinac Island traffic, Cessna 123 is ten miles south, will be entering left downwind for runway 26 at Mackinac Island.” This is important because many airports share the same CTAF frequency and some have the same runway alignment. Subsequent transmissions should be made just before entering the pattern and again on the downwind, base, and final legs. As important as communication is, it is also important to know what to communicate and what not to communi-

cate. With frequency congestion becoming a major problem, keeping transmissions short and to the point is not only good etiquette, it’s vital to safety. Above all, resist the temptation to use a CTAF frequency to engage in non-traffic advisory conversation.

DEFENSIVE FLYING: SURVIVING IN THE REAL WORLD

For reasons of time, economics, and aircraft operational characteristics, pilots of corporate, air taxi, and air carrier aircraft often fly abbreviated traffic patterns. This means base-leg entries or straight-in approaches are more likely to be observed at airports served by these types of airplanes. This is especially true when the weather is near the instrument approach minimums for the airport. Pilots of these aircraft must realize that their size, speed, or cost of operation does not give them priority or right-of-way over other aircraft. Likewise, pilots of small aircraft need to be aware that the speed and decreased maneuverability of larger aircraft make it impossible for them to fly the same pattern. Ultimately, the prevention of collisions in the traffic pattern is a matter of courtesy and mutual respect among pilots, regardless of their airplane’s size or speed.

Make your aircraft as conspicuous as possible and give yourself the maximum opportunity to see other traffic. With that in mind, I offer the following top 10 tips for collision avoidance in the traffic pattern.

The Top 10 tips for collision avoidance in the traffic pattern

10. Look outside!

9. Monitor the CTAF as you approach the airport (at least ten miles out).
8. Communicate! At least ten miles out, announce your position and intentions. Do so again prior to entering, and on each leg of the pattern. If your airplane doesn’t have a radio, buy a handheld transceiver.
7. Don’t use the CTAF for non-traffic advisory purposes.
6. Don’t make downwind landings or takeoffs.
5. Check publications and airport markings to determine if “right traffic” applies and for designated “calm wind” runways.
4. Use your lights, even in bright daylight.
3. Keep your windshield clean.
2. Fly defensively -- give the other pilot the benefit of the doubt.
1. **Look outside!**